

FACT SHEET

Broadway-Pantano Water Quality Assurance Revolving Fund Site January 2006

SITE DESCRIPTION

The Arizona Department of Environmental Quality (ADEQ) is investigating groundwater and soil contamination at the Broadway-Pantano Water Quality Assurance Revolving Fund (WQARF) Site. The ADEQ WQARF program, which is also known as state Superfund, investigates and cleans up contaminated groundwater and soil sites throughout the state.

The Broadway-Pantano WQARF Site is located in east central Tucson, and is bounded approximately by Speedway Boulevard to the north, the Pantano Wash to the east, Calle Madero (south of Broadway Boulevard) to the south, and Sahuara Avenue (west of Wilmot Road) to the west. The site consists of the Broadway North Landfill (BNL) and the associated groundwater contamination west of the Pantano Wash and north of Broadway Boulevard.

Groundwater at the site is contaminated with tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride, and methylene chloride occurring over regulatory limits. Groundwater contaminated with PCE occurring over regulatory limits has also been identified at the Broadway South Landfill (BSL). Other contamination is buried metal waste at a dross site at the far southern section of the BNL. Depth to groundwater is about 325 feet below ground surface.

SITE HISTORY

The BNL was originally a sand and gravel mining operation in the mid-1940s. At different times in the 1960s and early 1970s, the Pima County Sanitary District #1, the City of Tucson and Pima County disposed of municipal solid waste in dug-out areas.



A monitor well installed on a residential street right-of-way.

In 1987, PCE was detected in a city water well at the western edge of the landfill and the well was shut down. Three other city wells downgradient of the landfill were also later shut down. PCE and TCE were also detected in groundwater samples collected from the St. Joseph's Hospital well in 1994. City water was provided to the hospital until the city installed a wellhead treatment system in



Drill rig installs a monitor well on a neighborhood street. Residents are notified prior to site work through an active community involvement program.

1997, which removes contaminants to below detectable levels.

Groundwater contaminated with PCE occurring over regulatory limits was discovered at the BSL in the summer of 2000 when the city installed a monitoring well on the northwest corner of the BSL. PCE has since been detected in ADEQ monitoring wells downgradient of the BSL.

Home Depot discovered dross contamination at the BNL during a site investigation in November 2000.

The Broadway-Pantano site was placed on the WQARF Registry in 1998.

SITE INVESTIGATION/CLEANUP ACTION

Groundwater Remedial Investigation

Most of the groundwater investigation has been completed. In August 2005, the city installed two monitoring wells to the northwest of the westernmost plume to delineate the downgradient edge of the groundwater contamination.

Early Response Action for Groundwater

The Western Groundwater Containment System (WGCS) was installed by the city in 2003 with ADEQ funding and oversight. The purpose of the WGCS is to prevent further westward migration of groundwater contaminated with volatile organic compounds (VOCs) in order to protect the city's central well field. Contaminated groundwater is extracted via two wells, sent through a granular activated carbon treatment system, and then injected back into the aquifer via two recharge wells. The treatment facility is located on the east side of the Wilmot Library. The system

began operating in March 2003, and treats approximately 300-400 million gallons of groundwater each year. The city operates the system and ADEQ conducts the groundwater monitoring needed to evaluate system performance.

Broadway North Landfill Remedial Investigation

All of the field activities needed to finalize the Remedial Investigation (RI) for the BNL have been completed with the exception of soil gas testing needed to perform a shallow soil gas pathway risk assessment along the southwest perimeter. ADEQ is in the process of investigating the shallow soil gas pathway at the landfill.

Broadway North Landfill Early Response Action

In June 2000, the city installed a soil vapor extraction (SVE) system at the BNL, which removed the soil gas underneath the landfill and treated it with GAC to remove the VOCs. The SVE system removed more than 5,000 pounds of VOCs, including approximately 1,200 pounds of PCE and 270 pounds of TCE. The system was taken offline in September 2002 and rebound testing was conducted, which showed very little rebound of VOCs in the soil gas. ADEQ has determined that continued operation of the SVE system is no longer warranted.

The gross site is covered with clean soil and is fenced to prevent public exposure. The fence and soil cover are inspected monthly.

Remedial Investigation of Other Potential Sources

The BNL is a primary source of groundwater contamination at this site. However, 2005 groundwater data indicate that the BSL may also be contributing to the groundwater contamination, though to a much lesser degree than the BNL. ADEQ is expanding the investigation activities to include the BSL. Groundwater data and well water elevation data indicate that the BSL and BNL plumes have merged.

ADEQ is currently conducting the RI as part of the WQARF site remediation process. The RI activities help determine what contaminants are present at the site, the extent of the contamination, and potential sources of the contamination. Following the RI will be a Feasibility Study, which will identify and assess remedial options.

HEALTH/WATER QUALITY

There are potential risks associated with exposure to VOCs, principally through drinking contaminated groundwater. No one is known to be drinking contaminated water at this site; therefore, no one is known to be exposed or at risk of exposure to the contaminants. Cleanup activities are important to ensure the quality of future drinking water supplies.

The city's policy is to shut down any city water supply well containing a VOC concentration that reaches one-half of the regulatory limit. The St. Joseph's Hospital's water

treatment system removes VOCs to non-detectable levels.

The 1998 landfill investigation report included the results of a risk assessment, based on assumptions that were extremely protective of human health. It concluded that there is no emergency risk to residents next to the landfill, but there is a possible future risk of VOC-contaminated landfill gases migrating underground toward residences next to the landfill if the gases were left uncontrolled. ADEQ is evaluating this potential exposure pathway.



The Broadway-Pantano Western Groundwater Containment System treats approximately 1.2 million gallons of water per day through granulated activated carbon and injects the clean water back into the aquifer.

FOR MORE INFORMATION:

A Community Advisory Board (CAB) for the site was established in January 2000, and holds public meetings approximately four times a year. The purpose of the CAB is to advise ADEQ, the public and other interested parties about the issues and concerns of the community related to the investigation and cleanup of a WQARF site. The CAB consists of a diversified cross-section of the community, including residents, water providers, and other interested groups.

Technical Information:

Gretchen Wagenseller
ADEQ Project Manager
400 W. Congress St., Suite 433, Tucson, AZ 85701
(520) 628-6708
E-mail: wagenseller.gretchen@azdeq.gov

Community Involvement:

Eileen Palese
ADEQ Community Involvement Coordinator
400 W. Congress St., Suite 433, Tucson, AZ 85701
(520) 628-6712
E-mail: palese.eileen@azdeq.gov

Complete public files regarding the site are located at ADEQ's Phoenix offices. Call 1(800) 234-5677 for information.

For more information on this WQARF site or other WQARF sites in the State of Arizona, please visit the ADEQ Web site at: www.azdeq.gov. In the left-hand column, click on Waste Programs, then on Superfund Programs. Look for the Site Information and Maps Link.

Para información en español sobre este sitio, se puede contactar a Melissa Hayes al (520) 770-3309.